UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
OREGON OPERATIONS OFFICE
805 SW Broadway, Suite 500
Portland, Oregon 97205

December 3, 2014

Mr. Dan Hafley
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201

Dear Mr. Hafley:

The Environmental Protection Agency has completed its review of the Feasibility Study Report, Removal Action Engineering Design Report, and Removal Action Drawings and Specifications for the Willamette Cove Upland Facility. For your consideration and use, we have enclosed the technical review comments prepared by the EPA and its contractor, CDM Smith. The Willamette Cove area has been identified as a key area for the EPA's in-water efforts at the Portland Harbor Superfund Site.

The following are the significant concerns found during review of the documents:

- Preconceived constraints on how specific alternatives could address property reuse within upland areas to achieve protectiveness seem to exist. For instance, excavation of large areas of soil contamination with onsite disposal could result in greater overall protectiveness by decreasing hot spot contamination residuals left throughout the Facility, resulting in less reliance on institutional controls and greater redevelopment potential for recreational use.

- The residual risk assessment conducted for the recommended alternative indicates that the preferred remedy does not seem to entirely meet the protectiveness standards for cancer risk established in OAR 340-122 as a lifetime excess cancer risk of $1x10^{-6}$ for individual carcinogens or $1x10^{-5}$ for multiple carcinogens.

- Deferral of robust cleanup of hot spot soil contamination within the riverbank area and Greenway setback to later source control measures, in-water cleanup, or habitat restoration seems too heavily relied on. Since the scope and timing of these future measures are uncertain and achieving protectiveness promptly is important, cleanup within the riverbank area and Greenway setback should be evaluated and conducted as part of the remedial action at the Facility to the degree that work could be conducted without direct adverse impacts to the Willamette River.

- Inconsistency between assumptions for the preferred alternative in the FS and the removal action design approach seems to exist. The removal action design excludes the capping and access controls that are specified in the preferred alternative of the FS. Exclusion of these parts lowers the protectiveness of this remedial action to the Willamette River. Exclusion of capping and access controls from the initial excavation and disposal work also encourages use of the site for recreational purposes for an interim period of time when protectiveness may not be ensured.

- It seems that the Greenway setback established under local ordinance is perceived to prevent robust cleanup of hot spot soil contamination within upland areas. While the Greenway setback ordinances do result in additional coordination and review on cleanup approaches, it does not appear to be a prohibition on cleanup work. The removal action design also includes activities such as access road building that encroach within the setback zone so it is not clear why direct cleanup activities are decreased within the setback area.

- Requirements for erosion control and sedimentation protection for the removal action design are very limited. For example, the only physical best management practices shown on drawings is silt fencing, which is relatively ineffective for small drainages as shown on the removal action design drawings. Because of the Facility's proximity to the Willamette River, a more robust approach of best management practices should be carried out to meet the substantive requirements of the Clean Water Act.

The following are the recommendations identified during review of the documents:

- The FS and the removal action design should be revised to show more robust cleanup of hot spot contamination within the Greenway setback and adjacent riverbank, to the degree that the riverbank is not harmed or destabilized. Hot spot excavations should be extended into the Greenway setback and riverbank to as close to the mean high water level as is practical.

- The potential long-term impact of leaving openly excavated areas should be considered in the design. It is recommended that concurrent with the removal action, the excavations be backfilled to pre-existing grade.

- The removal action design should be revised to include more robust erosion and sedimentation control best management practices to protect the Willamette River.

EPA and CDM Smith are available to meet with you at your convenience to discuss these review comments. Please feel free to contact me at (503) 326-6554 or muza.richard@epa.gov with any questions that you might have on the EPA's review of these draft documents for Willamette Cove Upland Facility.

Sincerely,

Rich Muza

Rich Muza
Remedial Project Manager

Enclosures

Review Comments on Feasibility Study
Willamette Cove Upland Facility
Portland, Oregon
Dated October 3, 2014

General Comments

1. The timing of riverbank SCM and in-water remedy relative to the upland area remedial action is uncertain and remediation of hot spot contamination within the riverbank and 50-foot setback inland (i.e., Greenway setback) should not be deferred to occur during the riverbank SCM or in-water remedy. The FS evaluations should be revised to include remediation of contamination in these areas.

2. The preliminary remediation goals (PRGs), remediation levels, and remedial action objectives (RAOs) used to develop remedial alternatives in this FS do not consider protection of the Willamette River, aquatic receptors, or groundwater. For example, the dioxin/furan hot spot remediation level of 1,000 nanogram/kilogram (ng/kg) TEQ was determined by a cost versus dioxin/furan mass removal evaluation and has no consideration of whether this remedial level is protective of the Willamette River. The results of the ongoing source control evaluations for the riverbank erosion and groundwater pathways should be considered in determining remediation levels for constituents of concern (COCs) at the Facility.

3. EPA notes that based on the data presented in Appendix B, the vertical extent of contamination has not been delineated and the actual excavation depths required to meet the RAOs may be greater than 3 feet in some of the remedial action areas, increasing remediation costs for the alternatives involving excavation.

4. To provide and evaluate a range of alternatives that will allow ODEQ to select a remedial action, the FS should include another alternative that will remove dioxin/furan congener hot spots for protection of ecological receptors in the Central and West Parcel. Based on Figure 15, in the Central Parcel, the areas where dioxin/furan congeners exceed the hot spot level are generally collocated with the areas of non-dioxin/furan hotspots, indicating a contiguous area of contamination. In addition, another alternative that removes hot spots based on the dioxin/furan TEQ should be included.

5. The comparative evaluation of remedial action alternatives scores Alternative 4 (Excavation and On-Site Disposal) low relative to the other alternatives based on a low ranking for implementability and implementation risk. Alternatives 4 and 5, both including an on-site landfill, are ranked lowest for implementability and it is stated that "construction of an on-site landfill is not expected to be acceptable to the community or planning agencies." As discussed in Specific Comment #16, it is not appropriate to use expected community and public agency acceptance to evaluate implementability and the ranking of the alternatives should be adjusted accordingly in the FS.

   The effectiveness ranking for Alternative 4 should also be considered higher for Alternative 6 (Focused Excavation with Off-Site Disposal and Cap) because under Alternative 4, all of the soil exceeding remediation levels would be removed and consolidated into an on-site landfill, allowing for greater redevelopment potential for recreation use than Alternative 6. Alternative 6 relies on a cap over much of the site and restricted recreational use for protectiveness. Alternative 4 should also be considered to have higher long-term reliability than Alternatives 6 and 7 because of the greater control of maintaining a cap of a landfill of limited areal extent, relative to maintaining a cap over much of the site under Alternative 6. The effectiveness and long-term reliability ranking of these alternatives should be adjusted accordingly.

6. With the exception of Alternative 3 (Excavation and Off-Site Disposal) none of the remedial alternatives will prevent precipitation from infiltrating through contaminated soil and potentially leaching contaminants into groundwater. For alternatives involving excavation or grading of soil, there is potential to increase infiltration rates and mobilize contaminants to groundwater. Each alternative description should include a discussion of potential impacts to groundwater and post-remediation groundwater monitoring should be considered as a component of the remedy, if deemed necessary through the recommended evaluations.

7. Post-remediation drainage of the cap or excavation areas is critical to prevent erosion of the cap, ponding, or storm water discharges to the Willamette River; however, none of the remedial alternative descriptions discuss grading to promote post-remediation drainage of the site. Some of the alternatives propose excavation to depths of up to 3 feet and backfill with only 1-foot of soil. A description should be provided in the FS of how drainage will be handled for each alternative.

8. For any of the alternatives leaving contaminated soil in place (all alternatives except Alternative 3), placement of geotextile demarcation fabric between the cap and residual contaminated soil should be included in the remedy. The demarcation fabric will help, in the future, to determine if the overlying cap has been eroded to expose the underlying soil. The demarcation fabric will also be critical for integrating future riverbank erosion source control measure with the upland cap.

Specific Comments

1. Section 2, Page 2 – It is recommended that a section be added to the FS that identifies potential sources of contamination and contaminants based on historical site activities.

2. Section 2.1, Page 3, fifth paragraph – Figures showing the lateral and vertical extent of the contaminant plume emanating from the McCormick & Baxter site could be presented in the FS and discussed within Section 4.

3. Section 2.6, Page 6 – It is recommended that groundwater monitoring well locations be shown on Figures 3 through 7 and the range of groundwater levels be referenced to the well locations. The date of the groundwater level observations should also be provided.

4. Section 2.8, Page 7 – From the database export in Appendix B, it is difficult to identify depths, analytes, and detections for each of the sample locations shown in Figures 3 through 7. It is recommended that data tables showing each analyte group, what samples were analyzed, and the results be provided in the FS so it is clear what data are available at each sample location. Typically, summary tables from the previous remedial investigation report are used for this purpose.

5. Section 2.8.4, Page 8, first paragraph – There is no discussion of how constituents of interest (COIs) were included in the screening to identify the list of COCs presented in this section. The FS should provide a summary of discussion of how COIs were selected. From the site description and historical site use it is not clear what the source contamination is and how the list of COCs were selected. Rational for not including volatile organic compounds and pesticides in the list of COCs should be presented in this section. It is recommended that these omissions be added to the document.

6. Section 3.1.1, Page 9 – The PRG exceedence values are not clearly stated in this section. For example, under one bullet it is stated that "mercury exceeded the PRG by 25 percent" and in another bullet it is stated that "copper exceeded the PRG by a factor of 50 percent". It is recommended that the discussion of PRG exceedances be made clear and consistent and supplemented by a table comparing the values.

7. Section 4.0, Page 14 – As stated in Specific Comment #1, it is recommended that a section be added to FS that identifies potential sources of contamination based on historical site activities.

8. Section 4.1, Page 14 – It is recommended that a discussion of the vertical extent of contamination exceeding PRGs and hot spot levels be included in this section.

9. Section 5.1, Page 17 –EPA assumes that the groundwater pathway is being addressed in the groundwater source control evaluation; however, the remedial alternatives in this FS need to consider potential impacts to groundwater from implementation of the remedy.

10. Section 5.1.1, Page 17 – The RAOs should include preventing exposure of ecological receptors to surface and subsurface soil containing COCs above cleanup levels. This is particularly relevant in consideration of cap design. It is recommended that this issue be addressed in the document.

11. Section 6.1, Page 19, first paragraph – The extent of the 1,000 nanogram per kilogram dioxin/furan remediation area does not generally correspond to the extent of ecological hot spots identified based on individual congeners. The area planned for remediation is a much smaller area. Therefore, significant uncertainty exists for achieving protection of ecological receptors. It is recommended that this issue be addressed in the document.

12. Section 8.2, Page 26, Effectiveness – The statement that "COCs have relatively low solubility so are immobile" should be supported by a presentation of site data, such as COC concentrations in shallow groundwater monitoring wells. It is recommended that this omission be added to the document.

13. Section 8.6, Page 38, first paragraph – The Alternative 6 description states that site soil will be used to backfill the hot spot excavations. EPA notes that any on-site soil that is to be used to backfill the excavations for this alternative will require testing to ensure that the soil does not contain COCs at concentrations exceeding the PRGs for ecological and human health exposure. The same comment applies to Alternative 7. It is recommended that these omissions be addressed in the document.

14. Section 8.7, Page 41, second paragraph – In the other capping alternatives, measures were described to minimize the impacts of burrowing animals; however, in Alternatives 7 and 8 the impact of burrowing animals is described as enhancement to the capping measure. If mixing of clean capping soil, amendment, and underlying contaminated soil is part of the remedial measure, then the FS should include an evaluation of mechanized soil mixing and describe the means for evaluating the effectiveness of the mixing for reducing bioavailability and COC concentrations in soil. It is recommended that this omission be addressed in the document.

15. Section 8.7 and 8.8 – The effectiveness of an amended cap and mixing of cap soil with contaminated soil to reduce bioavailability of COCs and reduce COCs concentrations in soil has not been evaluated. Pilot testing of this technology at the facility could be conducted and the results should be incorporated into the FS. One of the RAOs is to "prevent exposure of ecological receptors to surface soil containing COCs above the levels in Table 1." Given the minimal thickness of the cap and the expected soil exposure from burrowing animals achieving this RAO has great uncertainty; therefore, the protectiveness of Alternatives 7 and 8 is questionable. It is recommended that these issues be addressed in the document.

16. Section 9.4, Page 48 – The statement that "the ability to implement these alternatives is assumed to be directly related to acceptance by the local community and local planning agencies…" is not consistent with the OAR 340-122-0090(3)(c), which states that the following factors should be considered when evaluating the implementability of an alternative:
    - A. *Practical, technical, and legal difficulties and unknowns associated with the construction and implementation of a technology, engineering control, or institutional control, including potential scheduling delays;*
    - B. *The ability to monitor the effectiveness of the remedy;*
    - C. *Consistency with federal, state and local requirements; activities needed to coordinate with other agencies; and the ability and time required to obtain any necessary authorization from other governmental bodies;*
    - D. *Availability of necessary services, materials, equipment, and specialists, including the availability of adequate offsite treatment, storage, and disposal capacity and services, and availability of prospective technologies; and*
    - E. *Any other information relevant to implementability.*

    Public and community concerns of the remedial action are considered by DEQ during their selection of the remedy and during the public comment period. Until the community and public agencies have

provided input on the remedial alternatives, this should not be used as a factor in evaluating the implementability of the alternatives. It is recommended that the scoring for implementability in Table 12 be adjusted accordingly.

17. Section 9.6, Page 49 – The 15 percent discount in the remediation cost estimates should be applied before calculating net present-worth. It is recommended that this issue be corrected.

18. Section 10.3.4, Page 55, last paragraph – The FS should expand the details and provide the basis for the statement that "reduction in exposure from the cap, the reduction in bioavailability of organic COCs, and the conservatism built into the exposure estimates result in qualitative risk estimates that are equivalent to acceptable risk levels for non-threatened/endangered species..." It is recommended that the qualitative risk estimates be presented in this section.

Review Comments on Removal Action Engineering Design
Willamette Cove Upland Facility
Portland, Oregon
Dated October 21, 2014

General Comments

1. The preferred alternative presented in the FS was Alternative 7 (Focused Excavation and Off-Site Disposal with Alternate Cap and Access Restriction). The RA Design Report presents the hot spot removal action portion of the preferred alternative to accelerate the cleanup schedule before the ROD. However, Section 2.2 does not adequately describe why portions of the preferred alternative, including cap construction and access restrictions, are not being implemented following hot spot removal. The report should present a preliminary schedule with a timeframe for future source control actions and other pertinent milestones.

2. **Proposed Hot Spot Excavation Areas:** The Greenway setback reduces or eliminates a significant portion of the identified hot spot excavation areas presented in the FS. As stated in Section 2.2 of the RA Engineering Design Report, the risk assessment concluded that baseline risks exceed acceptable levels for both ecological and human receptors. The RA Design Report does not state why hot spot excavations could not occur within the Greenway setback. The report should provide the basis for the design excluding work within the Greenway setback, including a discussion of the effect of deferring that portion of the remedy to be conducted with future source control actions.

   The design includes construction of erosion control and potential for haul road improvements within the Greenway setback. In addition, the design establishes methods to limit impact of excavation on existing Big Leaf Maple, Madrone, and Oregon White Oak trees outside of the Greenway setback.

   Chapter 33.440 (Greenway Overlay Zones) of the Portland Zoning Code does not specifically prohibit remediation work within the Greenway setback. The proposed methods for remediation around trees could be applied to hot spots within the Greenway setback to protect existing vegetation. Excavation of hot spot contamination, backfill to existing grade with clean soil, and removal of invasive vegetation would achieve the intent of the remedy that was recommended in the FS. EPA recommends that the design consider hot spot excavation within the Greenway setback as part of this work to remove contaminated soil in the upland area. The design of the remedy should be coordinated with the City of Portland to meet the necessary requirements for working within the Greenway setback.

3. **Erosion Control Measures:** The hot spot excavations are located adjacent to the Willamette River. As noted in the specific comments below, there are two small drainage areas that connect the removal area with the edge of the Willamette River. The design Drawing Set shows a single line of silt fence between the removal area and the river. EPA recommends that APEX include multiple erosion control measures, particularly in the small drainage areas where surface runoff could result in a release of contaminated materials to the river should the erosion control measure be overtopped. The additional erosion control measures should be shown on the Drawing Set.

4. **Confirmation Sampling:** The confirmation sampling approach for all COCs should be clarified in the RA Design Report. Section 3.8 of the RA Design Report states that sample results from prior sampling will be used as confirmation that removal goals have been achieved; however, the Drawing Set states that the final extent and depth of excavation will be based on confirmation sampling. Sheets C-3 through C-6 of the Drawing Set also indicates that sample locations shown are considered confirmation samples for analytes shown. Previous investigation sample results should not be used for confirmation of the final excavation extent. Please revise the RA Design Report and Sheets C-3 through C-6 of the Drawing Set to be consistent with the intended confirmation sampling methodology. In addition, excavation wall confirmation samples should be collected at the property boundary and final riverward excavation wall to

note if contamination extends beyond these excavation limits. The RA Design Report does not discuss the step out depth or distance for additional excavation, should a confirmation sample exceed the hot spot removal levels. The additional excavation extent for failed confirmation samples should be described in the report.

The RA Design Report generally states how confirmation samples will be collected following excavation; however, the confirmation sampling procedure presented in the report is not clear. Under the Sample Locations bullets, confirmation sampling would be conducted at a spacing of 100 linear feet of the excavation perimeter and a minimum of one sample per 5,000 square feet of excavation area. However, under the Sampling Procedure section, it is stated that samples would consist of 4-point composites collected at the corners of a nominal 5-foot square.

5. **Disposal of Excavated Material:** The RA Design Report states that samples have been collected and analyzed for metals using toxicity characteristic leaching procedure (TCLP). The report should also state whether dioxins and the other COCs were analyzed using TCLP. The report should include a waste management and disposal plan to state how the excavated soil stockpile will be sampled and analyzed to verify that the soil meets the disposal requirements of the receiving landfill.

6. **Excavation Areas:**
   a. The design Drawing Set presents plans for Excavation Areas 1, 2, 3, 5, and 6. The excavation areas are either incorrectly labeled or Excavation Area 4 was not included in the draft design. Please clarify.
   b. The design indicates that excavation would cease adjacent to property boundaries and Greenway setback. Hotspot contamination could remain adjacent to excavated areas. Run off from storm events contacting this soil may cause recontamination of remediated areas. The design should address potential recontamination of remediated areas.

7. **Backfill of Excavated Areas:**
   a. The design does not require backfill of excavated areas with the exception of clean backfill around existing trees. Excavated areas would presumably create poorly drained areas. Post-remediation drainage of the excavation areas is critical to prevent erosion, ponding, excess infiltration to groundwater, or storm water discharges to the Willamette River.
   b. The design intends to make use of existing material within the excavation to back slope excavation walls. The design does not specify a maximum back slope grade. EPA recommends that a maximum allowable back slope grade be specified in the design. In addition, the design should describe how soil to be reused will be tested to confirm that COCs concentrations do not exceed remediation levels.
   c. The design does not indicate that the excavation areas will be backfilled with clean fill to the pre-excavation grades. Ponding of water in these areas may result and have adverse effects to remaining trees. An arborist should be consulted on drainage requirements of the remaining trees.

8. **Work adjacent to Railroad**: Railroad safety rules will require flaggers and railroad safety training if work is within a specific distance from the nearest rail.

Specific Comments

Removal Action Engineering Design Report

1. **Section 2.2 – Prior Investigations and Studies:** It is recommended that a summary table of results driving the hot spot excavation be provided.

2. **Section 3.3.3 – Soil Excavation:** This section does not discuss storm water management. Storm water management will be important with regard to mobilization of contaminated soil particles, recontamination of remediated areas, excess infiltration to groundwater, and the potential for release of contaminated

material to the Willamette River. It is recommended that storm water management be addressed in the RA Design Report.

3. **Section 3.3.4 – Soil Disposal:** It is recommended that the Port verify with local landfills that waste with dioxins and PCBs will be accepted by local landfills.

4. **Section 3.6.1 – Waste Streams:** It is not clear why decontamination water would be added to soil being disposed of in an off-site landfill. It was previously stated that water would be collected and sampled for waste designation. EPA recommends collection and containerization of all decontamination fluids.

5. **Section 3.6.2 – Emissions, Dust, and Spills:** Dust control should also be conducted during excavation activities; however, the report states that dust control would only be conducted as needed. It is recommended that trigger levels for implementing dust control be described in the RA Design Report.

6. **Figures 2, 3, and 4:** Please add "Mean High Water" to legend.

Drawing Set

1. **Cover – Drawing Set and Legend:**
    a. Please review the legend and add missing line types and symbols. Missing line types include the 100-year flood plain and the Greenway setback. Missing symbols include monitoring well, tree type, excavation stations, and areas for haul road improvement.

2. **Sheet G-1 – Site Plan:**
    a. The sheet calls out 100-year floodplain, although the line type is not shown. The Greenway setback is not shown on this sheet. Please correct these concerns.
    b. The RA Design Report states that monitoring wells were used to determine groundwater levels at the site; however, the monitoring wells are not shown on the sheet. EPA recommends showing monitoring wells to avoid damage to them during construction. Note: Monitoring well MW-4 is shown on Sheet C-3, Detail B – Area 2 Excavation. Monitoring wells MW-5 and MW-6 are shown on Sheet C-4, Detail A – Area 3 Excavation. It is recommended that all monitoring wells at the Facility be shown so that the contractor can properly protect them during construction.
    c. EPA recommends showing existing concrete barriers on the Site Plan.
    d. A fiber optic line may run along the north south side of the property boundary. Please confirm.

3. **Sheet C-1 – Erosion Control, Site Preparation, and Construction Management Plan:**
    a. Please show the Greenway setback on Sheet C-1.
    b. The proposed silt fence and haul roads would be placed within the 50-foot Greenway setback. Please confirm that this is acceptable with respect to the City of Portland's Greenway setback development requirements.
    c. A drainage area leading to the Willamette River appears to the southeast of Excavation Area 2. According to the elevation contour intervals presented in the plan there is a 10-foot elevation change in this area. It is recommended that additional erosion control measures be included in this area to prevent potential uncontrolled discharges to the Willamette River.
    d. A drainage area appears in the south central portion of Excavation Area 3. According to the elevation intervals presented in the detail, there is a 5-foot elevation change in this area. It is recommended that additional erosion control measures be included in this area to prevent potential uncontrolled discharges to the Willamette River.

4. **Sheet C-3 – Excavation, Grading and Erosion Control Plan – Area 1 and Area 2:**
    a. Detail A - Area 1 Excavation.
        i. Please show the UPRR railroad line.
    b. Detail B - Area 2 Excavation.
        i. See previous comments regarding erosion and sediment control in this area.

ii. Please show the UPRR railroad line.

5. **Sheet C-4 – Excavation, Grading and Erosion Control Plan – Area 3:**
   a. Please show the silt fence on Sheet C-4.
   b. See previous comments regarding erosion and sediment control in this area.
   c. Please show the railroad line location.
   d. Please scale the line types.

6. **Sheet C-6 – Excavation, Grading and Erosion Control Plan – Area 6:**
   a. Please show the railroad line location.

7. **Sheet C-7 – Details:**
   a. Detail B -- EPA recommends the use of wire backed silt fence at a minimum. The wire backing will provide additional strength in a critical area such as along the river. Please provide additional erosion control measures in accordance with the City of Portland Erosion and Sediment Control Manual.
   b. Detail C – Please indicate the additional length of lateral excavation required should confirmation sampling be required.
   c. Detail D – Please specify the maximum allowable back slope grade.

8. **Sheet C-8 – Details:**
   a. Detail E – Please specify the maximum allowable back slope grade.
   b. Detail G -- It is not clear from the detail if backfilled soil will be sloped into the excavation. EPA recommends providing clean fill from the drip line to the excavation floor. Specification Section 015639, Paragraph 1.1.A requires the subcontractor to provide temporary fencing, barricades, and guards to protect trees. EPA recommends providing this level of detail for Detail D. Common method for protection of trees in excavation areas is orange safety fence.

Construction Specifications

1. Section 011100:
   a. Paragraph 1.1.A – Estimated quantities presented in the RA Design Report differ slightly from those presented in the specification. Please correct.

2. Section 015639 – Tree and Plant Protection:
   a. Paragraph 3.6.A.1 – Please provide a minimum maintenance time for replacement trees.

3. Section 015713 – Temporary Erosion, Sediment, and Pollution Control:
   a. Paragraph 1.3.A – Please add "Erosion and Sediment Control Regulations" to the reference.
   b. It is recommended that a Sediment and Erosion Control Plan meeting the requirements of City of Portland Title 10 – Erosion and Sediment Control Regulations be included in the design.

4. Section 312000, Paragraph 3.4.C. – It is stipulated that excavated surfaces should be graded to drain; however, this is counter to the Drawing Set requirement for back sloping the final excavation walls into the excavation area creating the potential for standing of pools of water and not a surface that will drain. Please correct this issue.